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| EXAMINER | |
|---|---|
| NILAND, PATRICK DENNIS | |

| ART UNIT | PAPER NUMBER |
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| 1796 | |

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| 10/29/2009 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/693,359 | DEVLIN ET AL. | |
| | Examiner | Art Unit | |
| | Patrick D. Niland | 1796 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *21 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,5-8 and 12-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 5-8, and 12-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/21/09 has been entered.

The amendment of 7/21/09 has been entered. Claims 1, 5-8, and 12-22 are pending.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 5-8, and 12-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

A. The newly recited formula of component b)ii) of the instant claims is not described in the specification. Particularly it is not described how to make a compound of the formula having the claimed $X^1R^1$, particularly the divalent oxygen of this formula. The newly recited formula is not present, as claimed, in the originally filed specification. In addition to not being described in the enabling disclosure, it is also new matter therefore.

B. The new recitation of "about 18" as the endpoint of the amended range of component c does not have basis in the originally filed specification. The newly added matter, e.g. the newly created range, is therefore new matter. There is not probative evidence of record that the argued tradename has the instantly claimed "about 18" carbons. The argued "comprises" regarding what is contained in the HiTEC-059 makes it unclear what else is contained that may affect the number of carbon atoms. It is noted that the claimed range of carbon atoms contains "about", which indicates that other things may be present including other carbon amounts that change the overall carbon content. "About" can have no other effect on a number of carbon atoms. The argued definitions of HiTEC-059 are therefore not persuasive in overcoming this rejection.

The applicant's arguments have been fully considered but are not persuasive for the above reasons. This rejection is therefore maintained.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 4-5, 7-8, and 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al. (U.S. 2002/0119895) in view of Burjes et al. (U.S. 4,755,311), *STN* structure, and US Pat. No. 4293432 Papay et al..

Cook et al. disclose composition used as gear lubricant and in turbines wherein the composition comprises polysulfide or sulfurized olefin, dithiocarbamate, i.e. friction modifier,

and amine salt of monothiophosphoric acid wherein the amine includes N-oleyl-1,3-diaminopropane and which corresponds to the presently claimed combination of hydrocarbylamine and alkylphosphoro(mono)thioate. It is noted that, as disclosed by *STN* (retrieved from the Internet: <URL: http://www.stn.cas.org/ ), that N-oleyl-1,3-diaminopropane is equivalent to N-oleyl trimethylene diamine as presently claimed. Further, given that the N-oleyl-1,3-diaminopropane is identical to that presently claimed, it is clear that it would also intrinsically function as a friction modifier as presently claimed. For specific types of monothiophosphoric acid, Cook et al. refers to Burjes et al. (incorporated by reference) which discloses monothiophosphoric acids of the formula:


where $R^1$ and $R^2$ are each hydrocarbyl groups such as alkyl group containing 1-30 carbon atoms (col.3, lines 52-56, col.3, line 66-col.4, line 2, and col.4, lines 33-45). It is disclosed that the composition is used as either a concentrate wherein the above is combined with minor amount of diluent or as a lubricant wherein the above is combined with major amount of base oil possessing viscosity of SAE 75W-140. There is also a disclosure of method for making the lubricant. It is further noted that the lubricant has kinematic viscosity of at least 4 cSt. Cook et al. disclose that the lubricant comprises 0.5-5% polysulfide or sulfurized olefin and 0.1-10% phosphorous agent, i.e. amine salt of monothiophosphoric acid, which corresponds to the presently claimed

combination of hydrocarbylamine and alkylphosphoro(mono)thioate wherein the hydrocarbylamine also functions as friction modifier, which clearly overlaps the amount of sulfur containing compound and hydrocarbylamine/alkylphosphorothioate/friction modifier required in the presently claimed composition (paragraphs 1, 3, 77, 86, 93, 121-122, 129, 141, 173-175 of which the turbines and gears of paragraph 174 are taken as encompassing wind turbine gears, 177, and 179) and phosphorus esters including those of phosphonic acid at section [0114].

While Cook et al. fails to exemplify the presently claimed concentrate or lubricant nor can the claimed concentrate or lubricant be "clearly envisaged" from Cook et al. as required to meet the standard of anticipation (cf. MPEP 2131.03), nevertheless, in light of the overlap between the claimed concentrate or lubricant and the concentrate or lubricant disclosed by Cook et al., it is urged that it would have been within the bounds of routine experimentation, as well as the skill level of one of ordinary skill in the art, to use concentrate or lubricant which is both disclosed by Cook et al. and encompassed within the scope of the present claims and thereby arrive at the claimed invention in view of the teachings of Papay et al.. Specifically, it would have been obvious to one of ordinary skill in the art at the time of the instantly claimed invention to use the instantly claimed component c in the composition of Cook et al. because Cook, section [0114] discloses the use of phosphorus esters including those of phosphonic acid at section [0114] as "wear/extreme pressure agents", Papay et al., the entire document, particularly column 5, lines 6-37 and column 6, lines 65-67, which shows these phosphonates to "significantly reduce" friction which will clearly reduce wear since friction is the main source of wear and thus the phosphonates of Papay, column 5, lines 6-37 are encompassed bu section [0114] of Cook.

Their stated affect on friction also makes them "friction modifying compounds" of the instant claims.

It is not seen that the recitations regarding "wind turbine gear additive" define over the cited prior art in any manner. First, the particulars of the wind turbine gear which are material, including propeller length and pitch, power/force ultimately transferred to said gear, type of gear, material gear is made of, gear size, gear ratios, shape of gear, teeth characteristics or other friction means of gear, etc. are not specified. Thus, no useful information is provided by this claim recitation and certainly not enough information is provided to distinguish over the cited prior art by this language alone. The turbines and gears of paragraph [0174] are taken as encompassing wind turbine gears. Furthermore, the demanding applications cited in paragraph [0174] coupled with the high pressure additives and the fact that the compositions of the reference are similar to those of the instant claims are taken as implying that the lubricant concentrates disclosed in the reference will function more than adequately in wind turbine gears. The applicant's argument' regarding what Cook is directed to is therefore not persuasive. The examiner does not agree that the ordinary skilled artisan would not consider using gear oil usable in turbines and in other more harsh uses in wind turbine gears. The examiner believes the opposite. See MPEP 2141, particularly the sections relating to the KSR decision. The claims are not limited to those turbines seeing close to 2 million Nm and this does not indicate what pressures the gear teeth are seeing, which appears significant to the gear oil the turbine uses. For example a viscous clutch would be expected to limit forces on the gear teeth and larger gear teeth giving larger areas to distribute the force over would result in lower pressures per unit of gear teeth area. Gearless sytems are not subject to the instant claims which clearly recite "gear", the

opposite of "gearless". The applicant's arguments have been fully considered but are not persuasive for the reasons stated above and are not commensurate in scope with the instant claims and the cited prior art. This rejection is maintained therefore.

The previous arguments related to Cook are again referenced and are cited below.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al. in view of Burjes et al. and *STN* structure as applied to claims 1, 4-5, 7-8, and 11-20 above, and further in view of Norman et al. (U.S. 5,942,470).

The difference between Cook et al. in view of Burjes et al. and *STN* structure and the present claimed invention is the requirement in the claims of the amount of each component in the concentrate.

Norman et al., which is drawn to additive concentrate for gear oils, disclose the use of concentrate that comprises 20-80% sulfur-containing component, i.e. polysulfide or sulfurized olefin, 1-15% amine salt of ester of phosphorous acid, 0.1-20% friction modifier and when in concentrate form, the amount of Papay's phosphonate of column 5, lines 34-37 will be increased due to the increased concentrations of additives in the concentrate form, and diluent oil in order to produce gear oil with improved positraction performance for long periods of time (col.1, lines 11-67, col.11, lines 37-40, and col.19, lines 12-25).

In light of the motivation for using sulfur-containing component, amine salt of ester of phosphorous acid, and friction modifier in concentrate in amounts disclosed by Norman et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use the sulfur-containing component, amine salt of ester of phosphorous acid, and friction modifier

in such amounts in the concentrate of Cook et al. in order to produce gear oil with improved positraction performance for long periods of time, and thereby arrive at the claimed invention. The applicant's arguments have been fully considered but are not persuasive for the reasons stated in paragraph 7 above. This rejection is maintained therefore.

8. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al. (U.S. 2002/0119895) in view of Burjes et al. (U.S. 4,755,311), *STN* structure, and US Pat. No. 4293432 Papay et al., as discussed in paragraph 5 above, and further in view of Laing et al. (U.S. 4,710,100).

Laing et al. disclose wind turbine comprising gear assembly wherein the gear assembly requires lubricant (col.1, lines 4-6 and col.3, lines 50-52).

The difference between Laing et al. and the present claimed invention is the requirement in the present claims of specific composition.

In light of the motivation for using specific lubricant disclosed by Cook et al. as described above in paragraph 5, it therefore would have been obvious to one of ordinary skill in the art to use such lubricant in the wind turbine of Laing et al. in order to produce turbine with good anti-wear properties, and thereby arrive at the claimed invention.

The applicant's arguments have been fully considered but are not persuasive for the reasons stated in paragraph 7 above. This rejection is maintained therefore.

**Response to Arguments**

9. Applicants argue that each of the rejections utilizing Cook et al., i.e. Cook et al. in view of Burjes et al. and *STN* Structure or Laing et al. in view of Cook et al. is not proper given that the examiner has not established a *prima facie* case of obviousness. Applicants argue that there is no

motivation to pick and choose all the claimed elements with reasonable expectation of success from Cook et al.

However, while it is agreed that one must choose thiophosphorous acid ester salt over thiophosphorous acid ester, then monothiophosphorous acid over phosphorodithioic acid, then amine over metallic, then polyamine over monoamine, and finally N-oleyl-1,3-diaminopropane, the fact remains that Cook et al. do explicitly disclose combination of hydrocarbylamine, i.e. N-oleyl-1,3-diaminopropane, identical to that presently claimed and alkylphosphoro(mono)thioate (as explicitly disclosed by Burjes et al. that is referred to by Cook et al.) identical to that presently claimed.

Further, while choices must be made to arrive at such combination, it is noted that each choice is not made from amongst a vast number of alternatives but from number of alternatives as small as two. Thus, it would have been obvious to one of ordinary skill in the art to utilize amine salt of monothiophosphoric acid in Cook et al., and thereby arrive at the claimed invention. Further, given that Cook et al. explicitly disclose the presently claimed load carrying capacity enhancing combination, one of ordinary skill in the art would have a reasonable expectation of success.

Applicants argue that the examiner utilizes impermissible hindsight.

However, in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge

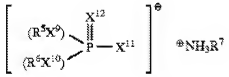
gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicants argue that the examiner has mischaracterized the teachings of Cook et al.

However, attention is drawn to paragraph 86 of Cook et al. that discloses polysulfide such as sulfurized olefin corresponding to presently claimed (a), paragraph 93 that discloses dithiocarbamate, i.e. friction modifier corresponding to presently claimed (c), paragraphs 121, 122, 129, and 141 that disclose amine salt of monothiophosphoric acid wherein the amine includes N-oleyl-1,3-diamonopropane, i.e. load carrying capacity enhancing combination, corresponding to presently claimed (b), and paragraphs 174, 175, 177, and 179 that discloses diluent oil or base oil corresponding to presently claimed (d). Thus, it is clear that Cook et al. do in fact disclose concentrate and composition as presently claimed.

With respect to the rejection utilizing Norman et al. in combination with Cook et al. applicants argue that that there is no disclosure in Cook et al. that fatty diamine such as N-oleyl-1,3-diaminopropane as presently claimed, is equivalent and interchangeable with alkyl amine as disclosed by Norman et al. and that Cook et al. merely discloses several compounds of which fatty diamine and alkyl amine are two. Applicants also argue that one of ordinary skill in the art would recognize the different properties that fatty diamine would impart as opposed to alkyl amine.

However, it is noted that Norman et al. disclose the use of amine salt of one or more partial ester of one or more acids of phosphorous of the formula:



where $R^5$-$R^7$ are each hydrocarbyl group and $X^9$-$X^{12}$ are each oxygen or sulfur and wherein the amine salt includes alkyl amine and that Cook et al. discloses amine salt of monothiophosphoric acid of the formula:

where $R^1$ and $R^2$ are each hydrocarbyl groups such as alkyl group containing 1-30 carbon atoms and wherein Cook et al. disclose that such amine includes not only alkyl amine but also N-oleyl-1,3-diaminopropane. Thus, in terms of amine utilized with monothiophophoric acid, it is the examiner's position that Cook et al. do disclose the equivalence and interchangeability of using fatty diamine with using alkyl amine. That is, given that Cook et al. disclose that alkyl amine and fatty diamine, i.e. N-oleyl-1,3-diaminopropane, are known amines for the amine salt of monothiophophoric acid and given that Cook et al. discloses that alkyl amine and N-oleyl-1,3-diaminopropane are each used with monothiophosphoric acid in composition for gears, Cook et al. has recognized the equivalence of these amines which includes that presently claimed.

In light of the above, given that Norman et al. and Cook et al. are drawn to the same field of endeavor, i.e. composition for gears, and absent evidence to the contrary, it therefore would have been obvious to one of ordinary skill in the art to utilize fatty diamine that is N-oleyl-1,3-diaminopropane in Norman et al. While applicants argue that fatty diamine and alkyl amine have different properties, there is no evidence to support such position and no evidence how, or if, such difference would effect the properties of the presently claimed concentrate or composition. It is noted that case law holds that mere substitution of an equivalent (something equal in value or meaning as taught by analogous prior art) is not an act of invention; where equivalence is known to the prior art, substitution of one equivalence to another is not patentable, *In re Ruff* 118 USPQ 343 (CCPA 1958).

The applicant's arguments regarding KSR are not persuasive because there is not showing of unexpected results stemming from the instantly claimed combinations of ingredients over the cited prior art that is commensurate in scope with the instant claims and the cited prior art particularly considering the broad ranges of amounts of components and the scope of the particular components of the instant claims. It is expected that the conventional additives of the above rejections will impart their known and usual properties to the above discussed compositions. The argued examples are not commensurate in scope with the cited prior art and the instant claims. The argued antiwear compounds of the cited prior art are expected to give improved load carrying capacity in that wear is proportional to load and something that decreases wear is expected to increase load carrying capacity. Furthermore, again, the argued examples are not commensurate in scope with the cited prior art and the instant claims particularly relating to

amounts and specifics of all components encompassed by both the prior art and the instant claims.

Arguments relating to only a single reference, e.g. Cook, do not address the full scope of the above rejections which are not based solely on one reference. In other words these arguments do not address the full scope of the above rejections. The above prior art does make obvious the instantly claimed combinations of ingredients, including those argued by the applicant, for the reasons stated in the above rejections.

Applicant's argument relating to examples 1-9 giving marginal load carrying capacity and the other examples 10-16 giving unexpected results for fluids containing the instantly claimed components (b)(i) and (b)(ii) are not seen as being unexpected because Cook discloses the instantly claimed (b)(i) and (b)(ii) as being antiwear/extreme pressure agents, which is expected to give the instantly claimed improved load carrying capacity because improved wear resistance coupled with greater pressure withstanding implied by "extreme pressure" agents gives "improved load carrying capacity". This result is therefore not unexpected of the instantly claimed (b)(i) and (b)(ii), particularly coupled with the other lubricant property improving compounds of the cited prior art. The examples argued by the applicant are not commensurate in scope with the disclosure of Cook and the instant claims. They are therefore not persuasive in demonstrating unexpected results over the cited prior art in a manner commensurate in scope with the instant claims and the cited prior art. The instant claims do not exclude any of the components of the cited prior art because they recited "comprising", including the molybdenum compounds of Cook. The applicant's arguments are not commensurate in scope with the full

teachings of Cook, particularly the paragraphs noted in the rejection above. Note "antiwear/extreme pressure agent" of paragraph [0121] of Cook and the full disclosure of Cook.

The applicant's arguments have been fully considered but do not overcome the above rejections for the above stated reasons. The above rejections are therefore maintained.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick D. Niland whose telephone number is 571-272-1121. The examiner can normally be reached on M-F from 10 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Patrick D Niland/
Primary Examiner
Art Unit 1796